

a first pitch, wherein  $N$  is greater than or equal to two,

10                   wherein the blow molding station comprises:

12                   a circulatory carrier for intermittently circulatorily carrying the preforms along a carrying path at a second pitch larger than the first pitch, the preforms being transferred from the preform molding station through the transfer station;

14                   a heating section for heating the preforms being transferred along the carrying path; and

16                   a blow molding section for simultaneously blow molding  $n$  of the containers from a second number  $n$  of the preforms, wherein  $n$  is greater than or equal to one and less than  $N$ ,

18                   and wherein the transfer station comprises:

20                   a receiving mechanism for simultaneously receiving the  $N$  preforms from the preform molding station with the  $N$  preforms at the first pitch,

22                   a preform handling mechanism to move the preforms from the receiving mechanism to an intermediate location, and

24                   a pitch changing and transfer mechanism for changing an array pitch of the preforms from the first pitch to the second pitch and also transferring  $n$  of the preforms from the intermediate location to the circulatory carrier in the blow molding station.

8. (New)           The injection stretch blow molding apparatus as defined in claim  
2                   7, wherein each preform has a neck and the pitch changing and transfer

mechanism includes two neck supporting mechanisms each of which supports  
the neck of the preform

9. (New) The injection stretch blow molding apparatus as defined in claim  
2 7, wherein the pitch changing and transfer mechanism comprises a  
mechanism for moving the n preforms along nonparallel paths with respect to  
4 each other.

10. (New) The injection stretch blow molding apparatus as defined in claim  
2 7, wherein n equals two, wherein there are at least four adjacent  
4 preforms at the first pitch in the preform handling mechanism in the transfer  
station, and the pitch changing and transfer mechanism moves two nonadjacent  
6 preforms from the intermediate location to the circulatory carrier in the blow  
molding station.

11. (New) The injection stretch blow molding apparatus provided on a  
2 single machine bed, comprising:  
4 a preform molding station for simultaneously injection molding N preforms at a  
first pitch;  
6 a blow molding station for simultaneously stretch blow molding n of the  
preforms at a second pitch into bottles, wherein N is an integer multiple of n and is  
greater than n, and the second pitch is greater than the first pitch;

8                   a transfer station for transferring the preforms from the preform molding station

to the blow station; and

10                  a single machine bed on which the preform molding, blow molding and transfer stations are provided,

12                  wherein the blow molding station comprises:

14                  a receiving section for receiving at least one preform from the preform molding station through the transfer station;

16                  a circulatory carrier for intermittently circulatorily carrying the preforms along a carrying path, the preforms being received from the receiving section;

18                  a heating section for heating the preforms carried along the carrying path;

20                  a blow molding section for blow molding the at least one preform carried along the carrying path into the at least one bottle; and

22                  a bottle ejecting section for ejecting the at least one bottle outside the apparatus,

and wherein the blow molding section is provided at an end side of the machine bed opposite the receiving section.

12.                 (New)           The injection stretch blow molding apparatus as defined in claim

2                   11, wherein the machine bed is substantially rectangular, and wherein the preform molding, transfer and blow molding stations are substantially linearly aligned on the machine bed.

4                   13.                 (New)           The injection stretch blow molding apparatus as defined in claim

2                   11, wherein the transfer station comprises:  
a receiving mechanism for simultaneously receiving the N preforms from the  
4 preform molding station with the N preforms at the first pitch;  
a pitch changing and transfer mechanism for changing an array pitch of the  
6 preforms from the first pitch to the second pitch while transferring n of the preforms to  
the circulatory carrier in the blow molding station, and  
8                   a preform handling mechanism to move the preforms from the receiving  
mechanism to the pitch changing and transfer mechanism.

14.               (New)       The injection stretch blow molding apparatus as defined in claim  
2                   11, wherein each preform has a neck and the pitch changing and transfer  
mechanism includes two neck supporting mechanisms each of which supports  
4                   the neck of the preform.

15.               (New)       The injection stretch blow molding apparatus as defined in claim  
2                   11, wherein the pitch changing and transfer mechanism comprises an  
advancing mechanism to move the n preforms along nonparallel paths with  
4                   respect to each other.

16.               (New)       The injection stretch blow molding apparatus as defined in claim  
2                   11, wherein n equals two, wherein there are at least four adjacent  
preforms at the first pitch in the preform handling mechanism in the transfer

4 station, and the pitch changing and transfer mechanism moves two nonadjacent  
6 preforms from the preform handling mechanism to the circulatory carrier in the  
blow molding station.

17. (New) The injection stretch blow molding apparatus comprising:  
2 an injection molding station including injection cores and neck cavity molds for  
4 simultaneously injection molding a first number N preforms where N is greater than  
one and the preforms are in an upright state with an open neck portion facing upward;  
6 a blow molding station for blow molding a second number n preforms where n  
is less than N into at least one container in an inverted state; and  
8 a transfer station which turns the preforms upside-down and simultaneously  
transfers n of the preforms to the blow molding station in an inverted state;  
10 wherein the injection molding station comprises an ejection mechanism for  
simultaneously ejecting the N preforms from the injection cores and the neck cavity  
molds;  
12 and wherein the transfer station comprises:  
14 a holding mechanism for holding at least the N preforms ejected from the  
injection cores and the neck cavity molds; and  
an inverting mechanism for rotating the holding mechanism about a  
16 horizontal axis, thereby the N preforms are turned from the upright state to the  
inverted state.

18. (New) The injection stretch blow molding apparatus as defined in claim

2 17, wherein:

4 N is at least two and the N preforms are each disposed at a first pitch; and  
the blow molding station comprises a circulatory carrier for intermittently  
circulatorily carrying at least N preforms along a carrying path each disposed at a  
6 second pitch larger than the first pitch;

8 and wherein the transfer station further comprises:

a pitch changing mechanism for changing an array pitch of the N  
preforms from the first pitch to the second pitch.

19. (New) The injection stretch blow molding apparatus of claim 18,

2 wherein the holding mechanism comprises a first and a second pair of  
gripping members.

20. (New) The injection stretch blow molding apparatus of claim 19,

2 wherein the holding mechanism further comprises a first mounting  
mechanism for mounting the first pair of gripping members, and a second  
4 mounting mechanism for mounting the second pair of gripping members.

21. (New) The injection stretch blow molding apparatus of claim 20,

2 wherein the pitch changing mechanism comprises a third mounting  
mechanism for movably mounting the first and second mounting mechanisms to

4 move relative to each other to change the pitch.

22. (New) The injection stretch blow molding apparatus of claim 18,  
2 wherein the pitch changing mechanism comprises a movement  
mechanism for moving the first and second pairs of gripping members relative  
4 to each other to change the pitch.

23. (New) The injection stretch blow molding apparatus of claim 17,  
2 wherein the pitch changing mechanism changes the pitch after the  
preforms are received by the receiving mechanism and the inverting mechanism  
4 inverts the preforms during transfer of the preforms from the transfer station to  
the blow molding station.

24. (New) The injection stretch blow molding device of claim 22,  
2 wherein the pitch changing mechanism changes the pitch from the first  
pitch to the second pitch by moving the first and second pairs of gripping  
4 members further away from each other to a distance equal to a multiple of the  
first pitch and closer to each other to a distance equal to the second pitch.

25. (New) The injection stretch blow molding apparatus of claim 7,  
2 wherein the receiving mechanism comprises a holder for receiving the  
preforms at the first pitch and in an upright state with an open mouth up.

26. (New) The injection stretch blow molding apparatus of claim 7,  
2 wherein the preform handling mechanism comprises an inversion  
mechanism for inverting the preforms from an upright state with an open mouth  
4 facing up to an upside down state with the mouth facing down, the pitch  
changing mechanism changes the pitch after the preforms are received by the  
6 receiving mechanism, and the inversion mechanism inverts the preforms during  
the transfer of the preforms from the transfer station to the blow molding  
8 station.

27. (New) The injection stretch blow molding apparatus of claim 7,  
2 wherein the pitch changing mechanism includes a holding mechanism for  
holding a neck of the preforms, and the holding mechanism comprises a first  
4 and a second pair of gripping members.

28. (New) The injection stretch blow molding apparatus of claim 27,  
2 wherein the holding mechanism further comprises a first mounting  
mechanism for mounting the first pair of gripping members, and a second  
4 mounting mechanism for mounting the second pair of gripping members.

29. (New) The injection stretch blow molding apparatus of claim 28,  
2 wherein the pitch changing mechanism comprises a third mounting  
mechanism for movably mounting the first and second mounting mechanisms to

4 move them relative to each other to change the pitch.

30. (New) The injection stretch blow molding apparatus of claim 27,  
2 wherein the pitch changing mechanism comprises a movement  
mechanism for moving the first and second pairs of gripping members relative  
4 to each other to change the pitch.

31. (New) The injection stretch blow molding device of claim 30,  
2 wherein the pitch changing mechanism changes the pitch from the first  
pitch to the second pitch by moving the first and second pairs of gripping  
4 members further away from each other to a distance equal to a multiple of the  
first pitch and closer to each other to a distance equal to the second pitch.

32. (New) The injection stretch blow molding apparatus, comprising:  
2 a preform molding station for injection molding preforms;  
4 a blow molding station for stretch blow molding the preforms into containers;  
and  
6 a transfer station for transferring the preforms from the preform molding station  
to the blow molding station,  
8 wherein the preform molding station comprises an injection molding section for  
simultaneously injection molding a first number N of the preforms at a first pitch,  
where N is greater than or equal to two,

10 wherein the blow molding station comprises:

12 a circulatory carrier for intermittently circulatorily carrying the preforms along

14 a carrying path at a second pitch larger than the first pitch, the preforms being transferred from the preform molding station through the transfer station;

16 a heating section for heating the preforms being transferred along the carrying path; and

18 a blow molding section for simultaneously blow molding  $n$  of the containers from a second number  $n$  of the preforms, where  $n$  is greater than or equal to one, and wherein the transfer station comprises:

20 a receiving mechanism for receiving the preforms released from the preform molding station while at the first pitch,

22 a preform handling mechanism for moving the preforms while in the first pitch from the receiving mechanism to an intermediate position between the receiving mechanism and the blow molding section, and

24 a pitch changing mechanism for changing an array pitch of the preforms from the first pitch to the second pitch.

33. (New) The injection stretch blow molding apparatus of claim 32,  
2 wherein each preform has a neck and the pitch changing mechanism includes two neck supporting mechanisms each of which supports the neck of  
4 the preform.